

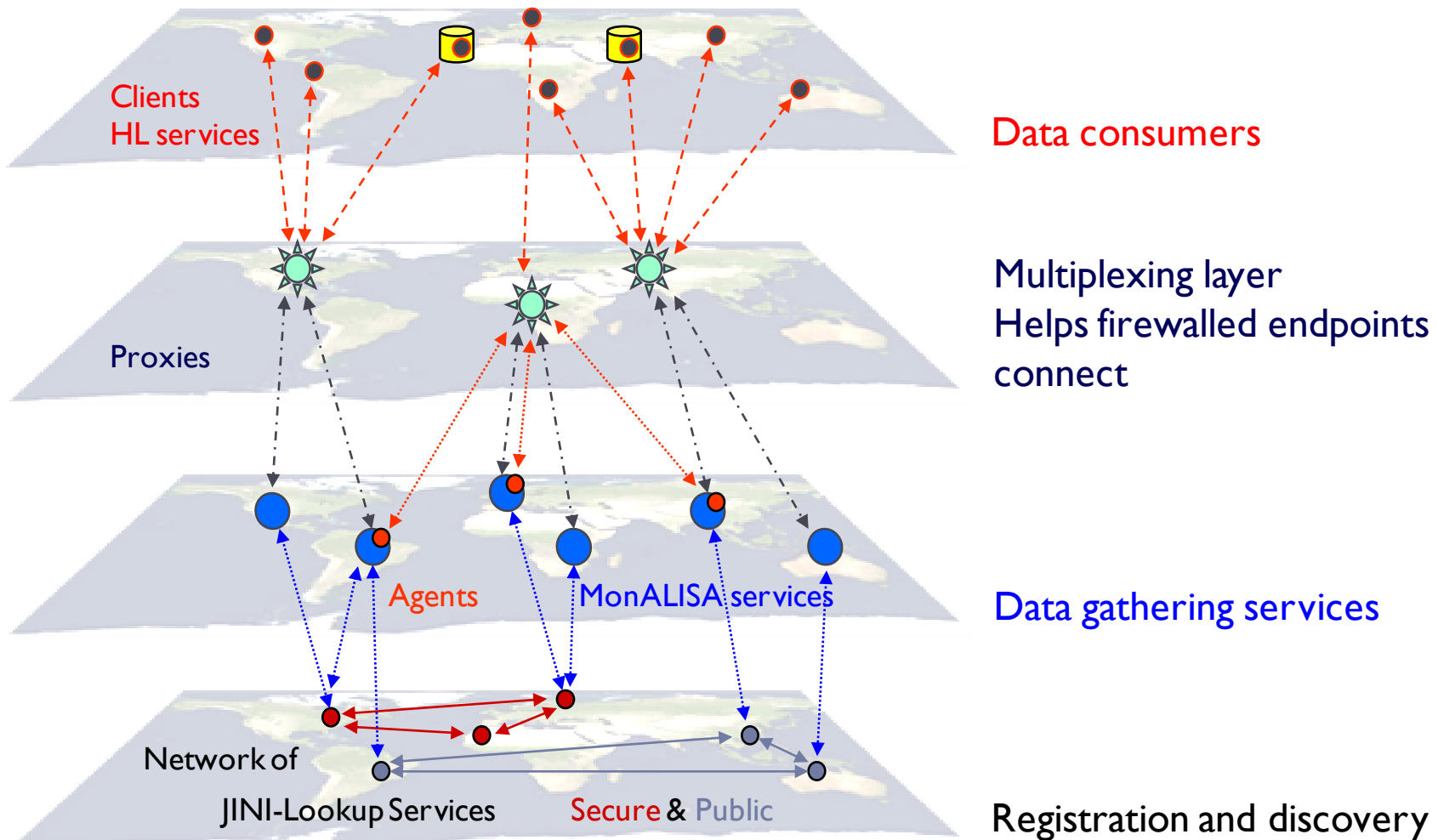
Monitoring with MonALISA

Costin Grigoras <costin.grigoras@cern.ch>

What is MonALISA ?

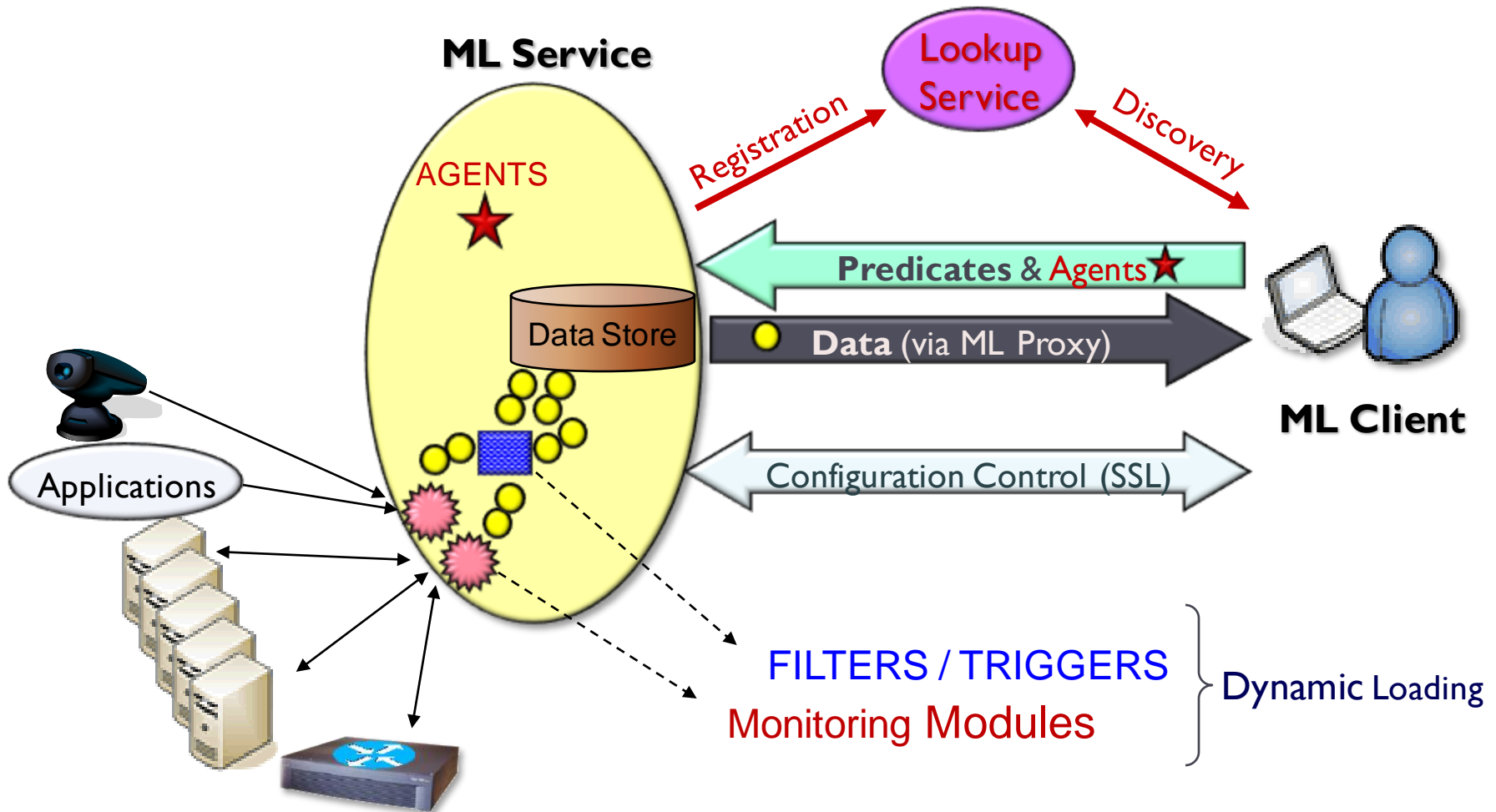
- ▶ Caltech project started in 2002
<http://monalisa.caltech.edu/>
- ▶ Java-based set of distributed, self-describing services
- ▶ Offers the infrastructure to collect any type of information
- ▶ Can process it in near real time
- ▶ The services can cooperate in performing the monitoring tasks
- ▶ Can act as a platform for running distributed user agents

MonALISA software components and the connections between them



Fully Distributed System with no Single Point of Failure

Subscriber/notification paradigm



Push or Pull, depending on device

MonALISA service includes many modules; easily extendable

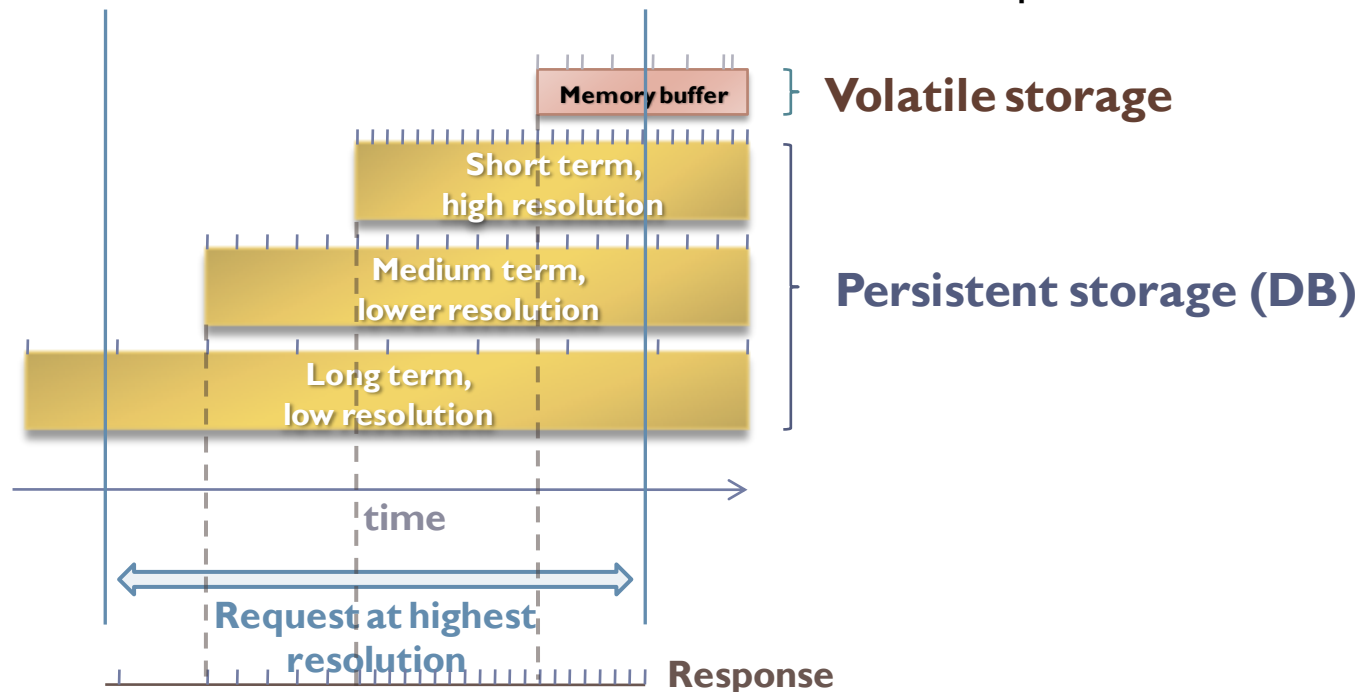
- ▶ The service package includes:
 - ▶ Local host monitoring (CPU, memory, network traffic , processes and sockets in each state, LM sensors, APC UPSs), log files tailing
 - ▶ SNMP generic & specific modules
 - ▶ Condor, PBS, LSF and SGE (accounting & host monitoring), Ganglia
 - ▶ Ping, tracepath, traceroute, pathload and other network-related measurements
 - ▶ Ciena, Optical switches
 - ▶ Calling external applications/scripts that return as output the values
 - ▶ XDR-formatted UDP messages (such as ApMon).
- ▶ New modules can be added by implementing a simple Java interface.
- ▶ Filters can also be defined to aggregate data in new ways.
- ▶ The Service can also react to the monitoring data it receives, more about the actions it can take later.
- ▶ MonALISA can run code as distributed agents
 - ▶ Used by VRVS/Evo to maintain the tree of connections between reflectors
 - ▶ Establishment of optical paths between two network endpoints for particular data transfers

Embeddable APlication MONitoring library

- ▶ ApMon is a collection of libraries in various languages (C, C++, Java, Perl, Python), all offering a simple API to sending monitoring information
- ▶ Based on the XDR open format of data packing
- ▶ Implemented over UDP to minimize the impact on the monitored application
- ▶ Allows applications to send particular values and also provides local host monitoring
 - ▶ The Perl version is used by AliEn to send monitoring information from each service and JobAgent to the site local MonALISA instance
 - ▶ The C/C++ implementations are used in ROOT (TMonalisaWriter), Proof and Xrootd. CMS also uses ApMon to send monitoring information from all jobs to a single point
- ▶ Can also be used stand-alone, in a wrapper application that loops forever, sending the default host monitoring parameters + any other interesting values (like some services' status)
- ▶ It can be configured by API, local configuration file or URL of one

Data storage model

- ▶ MonALISA keeps a memory buffer for a minimal monitoring history
- ▶ In addition, data can be kept in configurable database structures
 - The service keeps one week of raw data and one month of averaged values
 - The client creates three averaged structures
- ▶ Parallel database backends can be used to increase performance and reliability



Clients

▶ GUI client

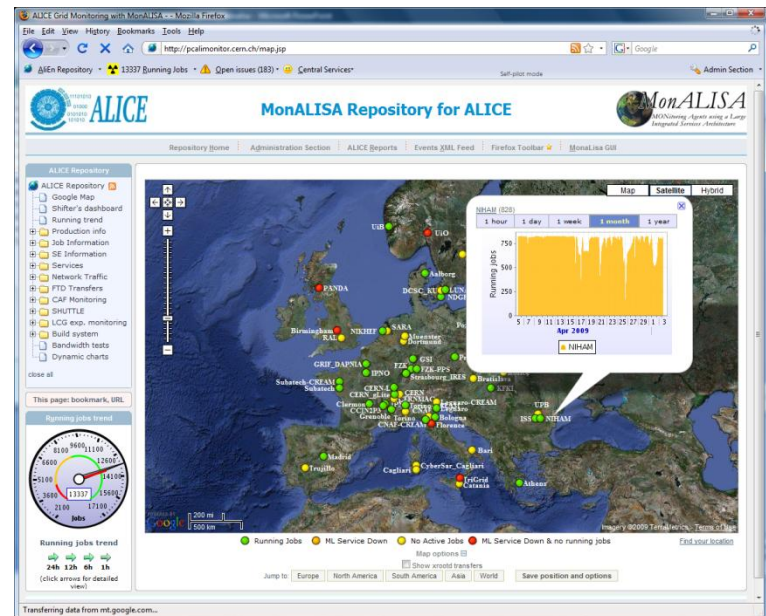
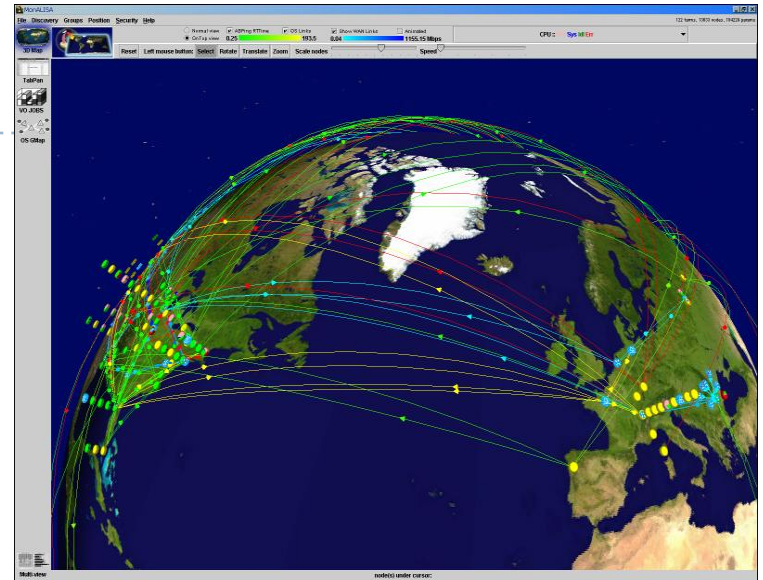
- ▶ Interactive exploring of all the parameters
- ▶ Can plot history or real-time values
- ▶ Customizable history query interval
- ▶ Subscribes to those particular series and updates the plots in real time

▶ Storage client (aka Repository)

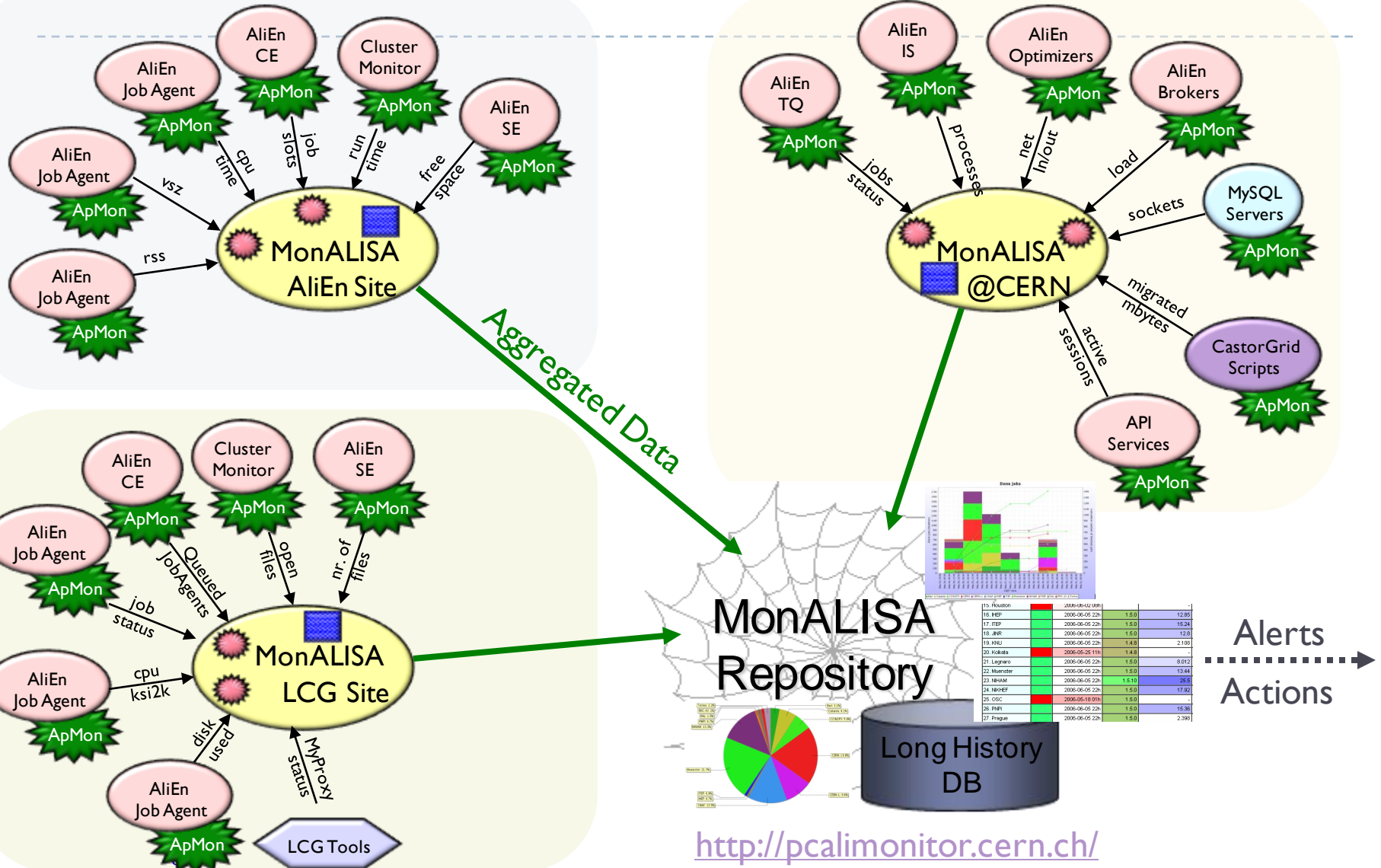
- ▶ Subscribes to a set of parameters and stores them in database structures suitable for long-term archival
- ▶ Is usually complemented by a web interface presenting these values
- ▶ Can also be embedded in another controlling application

▶ WebServices clients

- ▶ Limited functionality: they lack the subscription mechanism



AliEn monitoring architecture



<http://pcalimonitor.cern.ch/>

AliEn MonALISA service

- ▶ Started with
 - ▶ `alien StartMonaLisa`
- ▶ Should be started with the same environment as the rest of the AliEn services
 - ▶ `X509_USER_PROXY` in particular
- ▶ It receives information from each component
- ▶ Performs functional tests of each AliEn service running on the VoBox
- ▶ If necessary will receive commands to restart the services
- ▶ Self-monitoring through cron scripts, so `_don't_` remove the line
- ▶ This solves most problems with the AliEn VoBox services, including restart of the VoBox itself

Monitoring the ALICE Grid in numbers

- ▶ 85 sites defined
- ▶ 9000 worker nodes
- ▶ 14000 parallel jobs
- ▶ 27 central machines

- ▶ More than 1.1M parameters
- ▶ Storing only aggregated data where possible we have reached >35000 active parameters in the database
- ▶ We store new values at ~100Hz

- ▶ 15000 dynamic pages / day
- ▶ 1 client/web server + 3 database instances
- ▶ 170GB of history

MonALISA Repository for ALICE:

<http://pcalimonitor.cern.ch>

ALICE Grid Monitoring with MonALISA - - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://pcalimonitor.cern.ch/map.jsp

AliEn Repository 11122 Running Jobs Open issues (150) Central Services

New messaging system. No TF on Thursday, 21 May 2009 Admin Section

MonALISA Repository for ALICE

Repository Home Administration Section ALICE Reports Events XML Feed Firefox Toolbar MonALISA GUI

ALICE Repository

- ALICE Repository
- Google Map
- Shifter's dashboard
- Running trend
- Production info
- Job Information
- SE Information
- Services
- Network Traffic
- FTD Transfers
- CAF Monitoring
- SHUTTLE
- LCG exp. monitoring
- Build system
- Bandwidth tests
- Dynamic charts

close all

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Running jobs trend

Running jobs trend

24h 12h 6h 1h (click arrows for detailed view)

Subatech (164)

1 hour 1 day 1 week 1 month 1 year

Running jobs

May 2009

Subatech

Map Satellite Hybrid

Running Jobs ML Service Down No Active Jobs ML Service Down & no running jobs

Map options

Repository Home ALICE Web Page ALICE Clusters Contact Links

© CERN 2007 - ALICE EXPERIMENT

Series ▾ Options ▾ Alternative Views ▾

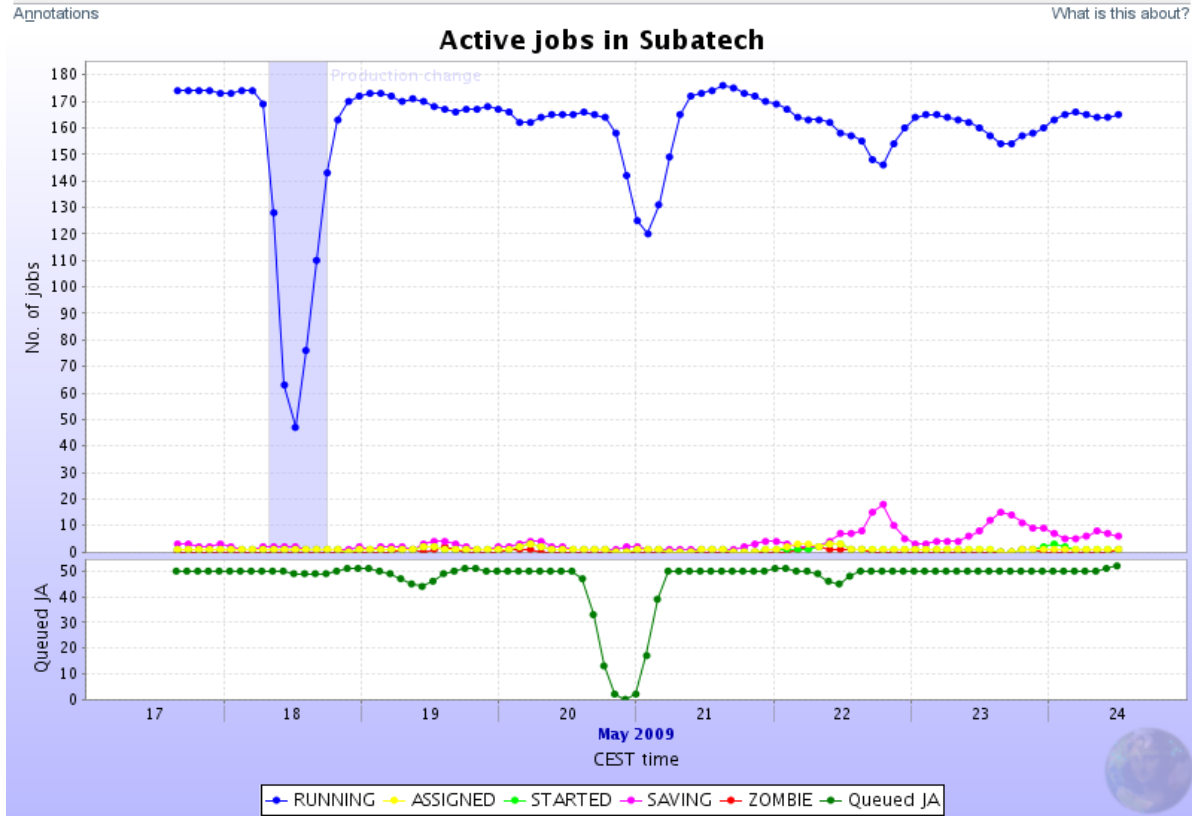
Jobs status: Active jobs | Done jobs (cumulative) | Error states (cumulative) (check all | uncheck all)

RUNNING ASSIGNED STARTED SAVING ZOMBIE Queued JA

Sum series: disabled ▾ Select site: Subatech ▾ Area view: disabled ▾ Image size: 800x550 ▾

Interval selection: last week ▾ or « 2009-05-17 12:00 - 2009-05-24 12:00 » Plot

Charts: Jobs in each state Queued JobAgents (check all | uncheck all)



Statistics ▾

Active jobs in Subatech				
Farm	Last value	Min	Avg	Max
■ RUNNING	165	13	159	180
■ ASSIGNED	1	0	1.056	37
■ STARTED	1	0	1.045	37
■ SAVING	6	0	3.787	54
■ ZOMBIE	1	0	0.236	7
Total	174		165.1	

Queued JA				
Farm	Last value	Min	Avg	Max
■ Queued JA	52	0	46.93	56
Total	52		46.93	

Services -> Site services -> Site overview

Select site: JINR

MonALISA information Version: 1.8.8 (JDK 1.6.0_10)
 Running on: lcgvo01.jinr.ru
 Administrator: Galina Shabratova <G.Chabratova@cern.ch>

Service health NTP: **SYNC**, offset: 0.011s

Services status AliEn: v2-16.34
 CE: **OK**
 SE: **OK**
 ClusterMonitor: **OK**
 PackMan: **OK**
 FTD: n/a

Proxies status
 AliEn proxy: **OK** (1 day, 23:59)
 Delegated proxy: **OK** (11:59)
 Proxy server: **OK** (29 days, 06:28)
 Proxy of the machine: **OK** (23:41)

SAM tests
 Delegated proxy duration: **OK**
 Proxy of the machine: **OK**
 Proxy renewal: **OK**
 Proxy server registration: **OK**
 RB status: n/a
 Software area: **OK**
 User proxy registration: **OK**
 WMS stats: **WARNING**

Current jobs status
 Assigned: 0
 Running: **567**
 Saving: 17

Accounting (last 24h)
 Success jobs: **1114** (profile)
 Failed jobs: **0**
 Error jobs: **150**
 kSI2k units: **828** / 234 pledged

Site averages (last 24h)
 Active nodes: 140.4
 Average kSI2k/node: 1.684

Storages status

Name	Status	Size	Used	Free	Usage	No of files	Type	ADD test
ALICE::JINR::DCACHE		-	-	-	-	-		OK
ALICE::JINR::SE	OK	73.24 TB	0%	73.24 TB	0.177 GB	146.7 K	File	OK

VoBox health
 CPUs: 2x 2793MHz
 Mem usage: 81.53% of 1.962 GB
 Processes: 266
 Sockets: 252 TCP / 20 UDP
 Uptime: 16 days, 14:24

CPU usage (last 1h avg)
 Load: **1.129**
 User: 32.97%
 System: 2.86%
 IOWait: 0.041%
 Idle: 61%

Int: 0.001%
 Soft int: 3.125%
 Nice: 0%
 Steal: 0%

AliEn LDAP var	VoBox path	Size	Used	Free	Use%
TMP	/home/sali001/ALICE/tmp	11.81 GB	10.46 GB	770.9 MB	94%
LOG	/home/sali001/alien-logs	11.81 GB	10.46 GB	770.9 MB	94%
CACHE	/home/sali001/ALICE/cache	11.81 GB	10.46 GB	770.9 MB	94%

Services -> Site services -> Site overview

ALICE Repository

- ALICE Repository
- Google Map
- Shifter's dashboard
- Running trend
- Production info
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- SE Information
- Services
 - Central Services
 - Site Services
 - Site overview
 - VO Boxes
 - Services status
 - MonaLisa
 - Proxies
 - Packages
 - VoBox temp
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close all

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SAM tests Delegated proxy duration: OK
 Proxy of the machine: OK
 Proxy renewal: OK
 Proxy server registration: OK
 RB status: n/a
 Software area: OK
 User proxy registration: OK
 WMS stats: WARNING

Current jobs status Assigned: 0
 Running: 557

Accounting (last 24h) Success jobs: 1114 (profile)
 Failed jobs: 0
 Error jobs: 150
 kSI2k units: 828 / 234 pledged

Site averages (last 24h) Active nodes: 140.4
 Average kSI2k/node: 1.684

Link to this page

The link to the current page is:

<http://pcalimonitor.cern.ch/siteinfo/index.jsp?site=JINR>

[Make this page your start page](#)

Status	Size	Used	Free	Usage	No of files	Type	ADD test
-	-	-	-	-	-	-	OK
OK	73.24 TB	0%	73.24 TB	0.177 GB	146.7 K	File	OK

CPU usage (last 1h avg) Load: 1.129
 User: 32.97%
 System: 2.86%
 IOWait: 0.041%
 Idle: 61%

Int: 0.001%
 Soft int: 3.125%
 Nice: 0%
 Steal: 0%

VoBox path	Size	Used	Free	Use%

Services -> Site services -> VO Boxes

Global views: General status

Detailed history: Load | Cpu usage | Memory usage | Swap usage | eth0 IN | eth0 OUT | eth1 IN | eth1 OUT | Processes | Sockets

VO Box machine status

What is this about?

Machine status (last hour average values)

Site name	Last seen online	CPU											Mem [% MB]		Swap [% MB]		Eth0 [KB/s]		Eth1 [KB/s]		Eth2 [KB/s]		System	
		Load5	User	System	IOWait	Int	SoftInt	Nice	Steal	Idle	Cnt	MHz	Usage	Total	Usage	Total	In	Out	In	Out	In	Out	Procs	Socks
1. Aalborg	2009-05-24 12h	0.056	2.747	1.253	0.012	0.004	0.171	0	0	95.81	2 2793	27	2026	0.024	3121	-	-	4.324	4.343	10.94	3.639	100	51	
2. Athens	2009-05-24 12h	0.222	3.849	0.832	1.581	0.004	1.484	0	-	92.25	2 2328	39	2009	0.01	2000	15.46	2.904	36.01	15.53	-	-	87	224	
3. Bari	2009-05-24 12h	0.509	11.72	0.514	0.038	0.01	0.058	0	-	87.66	4 2205	21	3956	0.234	8001	-	-	56.94	27.23	-	-	104	80	
4. Birmingham	2008-09-05 16h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5. BITP	2009-05-24 12h	0.052	0.726	0.339	0.211	0.032	0	0	-	98.69	4 3193	16	4053	0	4094	169.8	96.36	85.15	156.4	-	-	117	101	
6. Bologna	2009-05-24 12h	0.164	5.81	1.451	0.088	0.012	0	0	-	92.64	2 3067	17	4057	0	2000	-	-	20.75	8.442	-	-	149	69	
7. Bratislava	2009-05-24 12h	0.04	3.177	1.059	0.041	0.023	0.059	0	-	95.64	1 2000	20	2007	0.01	2047	13.22	2.662	2.024	2.122	-	-	63	29	
8. Cagliari	2009-05-22 16h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9. Catania	2009-05-21 23h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10. CCIN2P3	2009-05-24 12h	2.193	26.82	0.373	0.127	0.011	0.043	0.001	-	72.63	8 1992	29	16026	0	2047	62.26	59.02	-	-	-	-	220	216	
11. CERN	2009-05-24 12h	0.496	8.39	5.43	0.006	0.045	0	0	-	86.13	4 2388	55	5834	0.185	8000	78.15	33.03	-	-	-	-	778	785	
12. CERN_gLite	2009-05-24 12h	1.588	59.58	2.999	0.2	0.005	0	0	-	37.22	2 3001	48	4051	0.001	4094	11.64	4.142	-	-	-	-	121	42	
13. CERN_HLT	2009-03-02 22h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14. CERN-L	2009-05-24 12h	2.806	70.57	3.558	0.914	0.03	0	0	-	24.93	2 3002	54	4051	0.313	4094	56.42	52.01	-	-	-	-	133	216	
15. CERN_lxgate	2008-11-24 18h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16. CERNMAC	2009-05-24 12h	0.062	0.96	1.288	0	0	0	0	-	97.75	-	29	8192	0	64	-	-	-	-	-	-	86	45	
17. Clermont	2009-05-24 12h	0.248	6.058	0.835	0.015	0.012	0	0	-	93.08	4 3062	18	4054	0	4094	40.27	25.93	-	-	-	-	119	85	
18. CNAF	2009-05-24 12h	0.213	6.388	2.94	0.049	0.032	0	0	-	90.59	2 3067	29	4057	0	4000	56.69	51.7	-	-	-	-	143	124	
19. CNAF-CREAM	2009-05-24 12h	-	88.99	10.22	0.025	0.41	0	0	-	0.359	-	-	-	-	-	-	-	-	-	-	-	-	-	
20. COMSATS	2009-05-24 12h	0.063	3.212	0.305	0.106	0.002	0	0.002	-	96.37	2 2664	74	2015	0.009	2000	9.789	4.132	-	-	-	-	124	45	
21. CSC	2009-05-12 07h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
22. CyberSar_Cagliari	2009-05-22 14h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
23. Cyfronet	2009-05-24 12h	1.829	63.08	2.502	0.815	0.106	0.443	0	-	33.05	2 2800	50	2006	0.273	8143	79.02	42.76	-	-	-	-	121	156	
24. DCSC_KU	2009-05-24 12h	0.071	1.675	0.613	0.216	0.078	0.301	0	-	97.12	2 3201	48	2007	0.003	4094	6.967	0.536	9.514	2.769	-	-	89	399	

Services -> Site services -> Services status

VOBOX AliEn services status

What is this about?

AliEn services									
Service	VOBox			AliEn services					
	Address	AliEn version	Timestamp	Monitoring script	CE	SE	PackMan	Monitor	FTD
1. Aalborg	francis.grid.aau.dk	v2-16.56	24.05.2009 14:24			-			-
2. Athens	vob01.athena.hellasgrid.gr	v2-16.65	24.05.2009 14:31			-			-
3. Bari	alicegrid6.ba.infn.it	v2-16.70	24.05.2009 14:33						-
4. Birmingham	epcf01.ph.bham.ac.uk		-						-
5. BITP	alice9.bitp.kiev.ua	v2-16.55	24.05.2009 14:38						-
6. Bologna	boalice6.bo.infn.it	v2-16.31	24.05.2009 14:27						-
7. Bratislava	lcvobox.dnp.fmph.uniba.sk	v2-16.28	24.05.2009 14:35		May ...		May ...	May ...	-
8. Cagliari	vobox.ca.infn.it		-						-
9. Catania	vobox.ct.infn.it		-						-
10. CCIN2P3	cclcalice02.in2p3.fr	v2-16.31	24.05.2009 14:26					May ...	May ...
11. CERN	aliendb4.cern.ch	v2-16.31	24.05.2009 14:26						-
12. CERN-L	voalice06.cern.ch	v2-16.37	24.05.2009 14:35					May ...	
13. CERN_gLite	voalice03.cern.ch	v2-16.37	24.05.2009 14:27						
14. CERN_HLT	alihlt-vobox0.cern.ch		-						-
15. CERN_lxgate	128.142.201.230		-						-
16. CERNMAC	alimacx02.cern.ch	v2-16.8	24.05.2009 14:26						
17. Clermont	drvoboxalice.in2p3.fr	v2-16.53	24.05.2009 14:35						
18. CNAF	ui01-alice.cr.cnaf.infn.it	v2-16.54	24.05.2009 14:39						
19. CNAF-CREAM	ui02-alice.cr.cnaf.infn.it	v2-16.54	24.05.2009 14:26						
20. COMSATS	203.124.40.30	v2-16.40	24.05.2009 14:25						
21. CSC	alice-vobox.csc.fi		-						-
22. CyberSar_Cagliari	vobox-cybr.ca.infn.it		-						-
23. Cyfronet	alice.grid.cyf-kr.edu.pl	v2-16.77	24.05.2009 14:30						
24. DCSC_KU	gateway02.dcsc.ku.dk	v2-16.72	24.05.2009 14:33		ERRO...		ERRO...	ERRO...	
25. Dortmund	udo-vobox01.grid.tu-dortmund.de	v2-16.38	24.05.2009 14:30		May ...	May ...			
26. Florence	terbio.math.unifi.it	v2-16.31	24.05.2009 14:40						

Click for more details

May 24 14:28:49 info Hello ALICE::CERN::SE May 24 14:28:49 info Reading the configuration file from /home/grid/alicesgm/.alien/alice.conf May 24 14:28:49 info The local configuration is not allowed to define services May 24 14:28:49 info The local configuration is not allowed to define services May 24 14:28:49 info The local configuration is not allowed to define services May 24 14:28:49 info The local configuration is not allowed to define services May 24 14:28:49 info The local configuration is not allowed to define services May 24 14:28:49 info The local configuration is not allowed to define services May 24 14:28:49 info The local configuration defines

Services -> Site services -> Proxies

Proxies								
Service	AliEn Tests		LCG Tests					
	AliEn proxy		Delegated proxy		Proxy Server		Proxy of the machine	
	Status	Time left	Status	Time left	Status	Time left	Status	Time left
1. Aalborg		1d 23:59	-	-	-	-	-	-
2. aliendb5.cern.ch		0min	-	-	-	-	-	-
3. Athens		11:57		11:59		33d 13:48		22:34
4. Bari		1d 23:59		11:59		17d 2:20		23:40
5. BITP		1d 23:03	-	-	-	-	-	-
6. Bologna		11:54		11:58		27d 17:50		23:25
7. Bratislava		0min	Unab...	0min	Fail...	0min		23:34
8. CCIN2P3		1d 23:58		11:59		13d 20:18		23:36
9. CERN		11:14	-	-	-	-	-	-
10. CERN_gLite		1d 23:42	-	-	-	-	-	-
11. CERN-L		1d 23:48		11:59		33d 13:41		23:27
12. CERNMAC		1d 23:56	-	-	-	-	-	-
13. Clermont		1d 23:55		11:59		33d 13:41		23:27
14. CNAF		1d 23:58		11:59		27d 17:58		23:33
15. CNAF-CREAM		1d 23:48	-	-	-	-	-	-
16. COMSATS		0min	-	-	-	-	-	-
17. Cyfronet		11:54		11:59		17d 1:43		23:54
18. DCSC_KU		0min	-	-	-	-	-	-
19. Dortmund		29d 2:45	-	-	-	-	-	-
20. Florence		1d 20:28	-	-	-	-	-	-
21. FZK		11:56		11:59		13d 20:06		23:24
22. FZK-PPS		1d 0:54	-	-	-	-	-	-
23. Grenoble		1d 23:53		11:59		33d 13:42		23:28
24. GRIF_DAPNIA		11:56		11:59		33d 14:34		18:20
25. GSI		11:50		11:59		27d 3:05		23:33
26. Hiroshima		1d 23:27	-	-	-	-	-	-

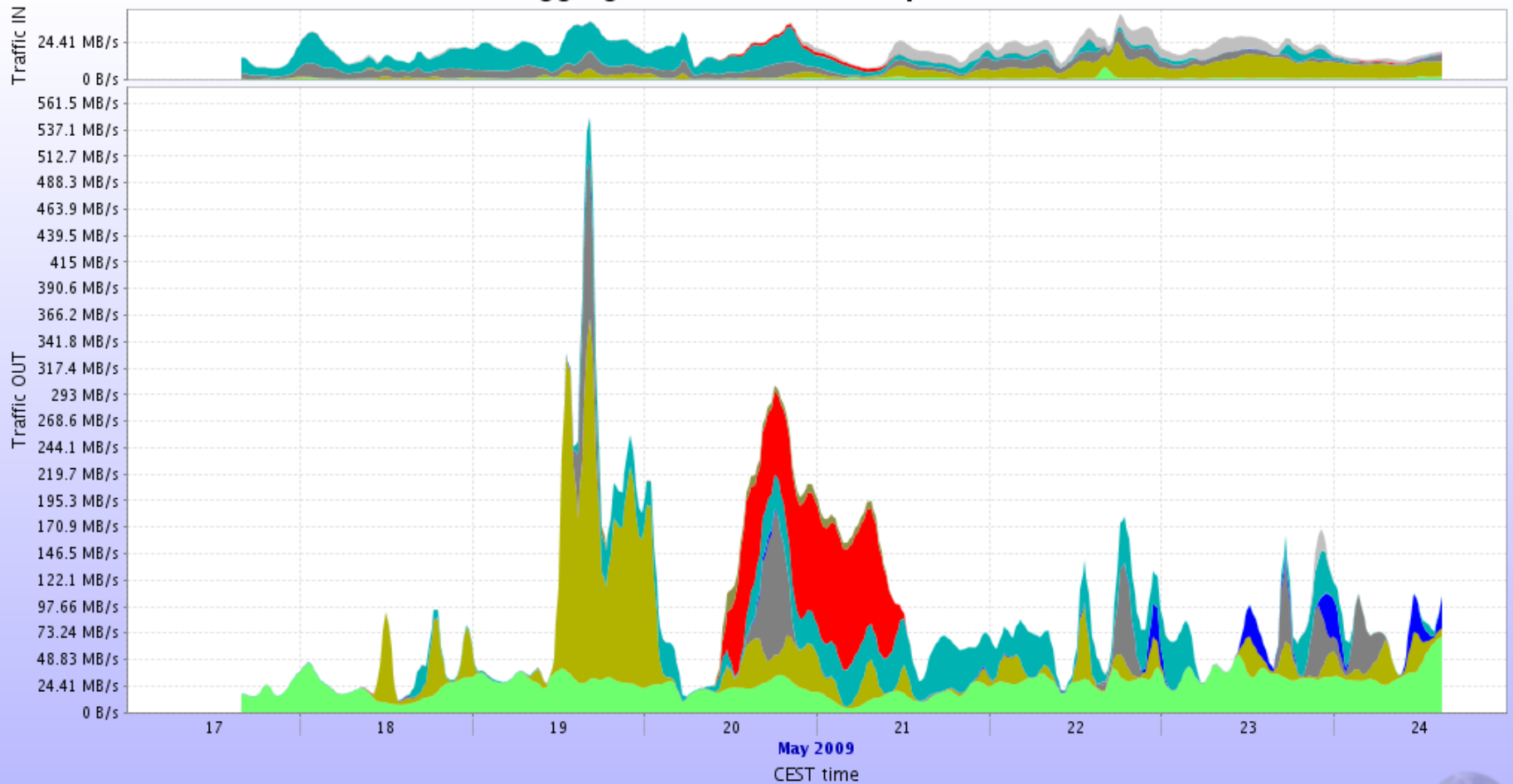
Services -> Site services -> SAM tests

SAM Tests							
What is this about?							
Site	Delegated proxy duration	Proxy of the machine	Proxy Renewal	Proxy Server Registration	Software area	User Proxy Registration	WMS Stats
1. Athens	OK	OK	OK	OK	OK	OK	WARNING
2. Bari	OK	OK	OK	OK	OK	OK	WARNING
3. Birmingham	ERROR	OK	OK	OK	OK	ERROR	WARNING
4. Bologna	OK	OK	OK	OK	OK	OK	WARNING
5. CCIN2P3	unknown	unknown	unknown	unknown	unknown	unknown	unknown
6. CERN	unknown	unknown	unknown	unknown	unknown	unknown	unknown
7. CERN-L	unknown	unknown	unknown	unknown	unknown	unknown	unknown
8. CERN_gLite	OK	OK	OK	OK	OK	OK	WARNING
9. CNAF	OK	OK	OK	OK	OK	OK	WARNING
10. Cagliari	unknown	unknown	unknown	unknown	unknown	unknown	unknown
11. Catania	OK	OK	OK	OK	OK	OK	WARNING
12. Clermont	OK	OK	OK	OK	OK	OK	WARNING
13. CyberSar_Cagliari	ERROR	OK	ERROR	OK	OK	ERROR	WARNING
14. Cyfronet	OK	OK	OK	OK	OK	OK	WARNING
15. FZK	OK	OK	OK	OK	OK	OK	WARNING
16. GRIF_DAPNIA	unknown	unknown	unknown	unknown	unknown	unknown	unknown
17. GSI	OK	OK	OK	OK	OK	OK	WARNING
18. IHEP	OK	OK	OK	OK	OK	OK	WARNING
19. IPNL	OK	OK	OK	OK	OK	OK	WARNING
20. IPNO	OK	OK	OK	OK	OK	OK	WARNING
21. ITEP	OK	OK	OK	OK	OK	OK	WARNING
22. JINR	OK	OK	OK	OK	OK	OK	WARNING
23. KFKI	OK	OK	OK	OK	OK	OK	WARNING
24. KISTI	OK	OK	OK	OK	OK	OK	WARNING
25. Kolkata	OK	OK	OK	OK	OK	OK	WARNING
26. Kosice	OK	OK	OK	OK	OK	OK	WARNING
27. Legnaro	OK	OK	OK	OK	OK	OK	WARNING



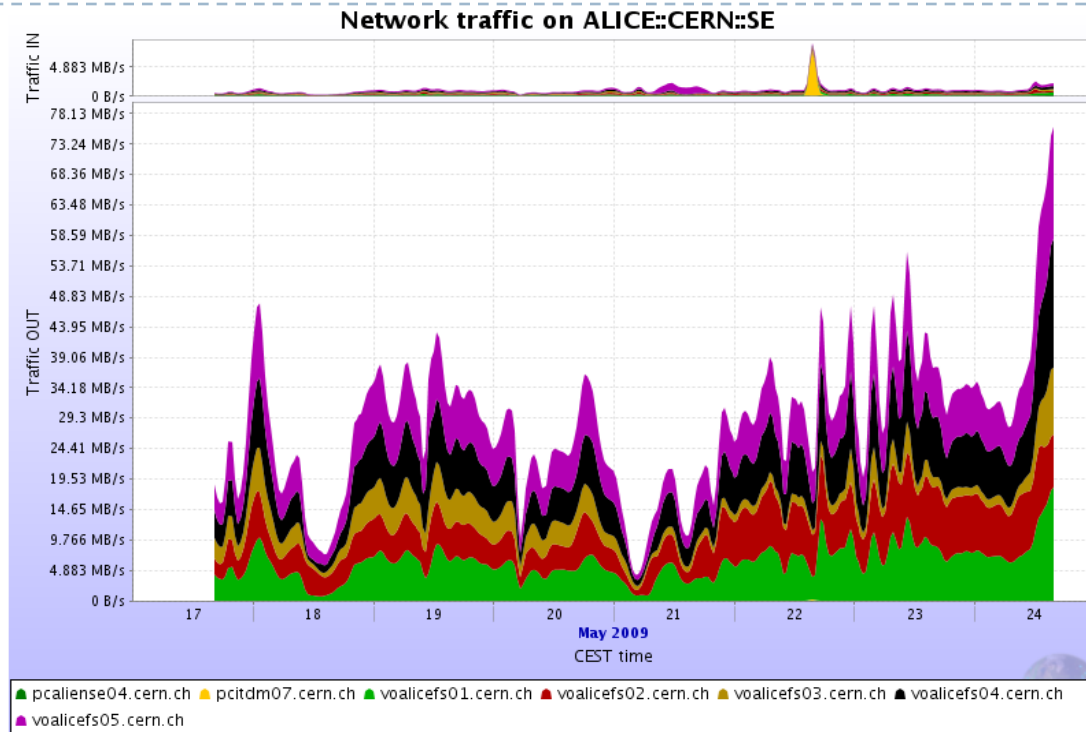
SE Information -> xrootd -> SEs overview

Aggregated network traffic per SE



■ Bologna::SE ■ CERN::SE ■ CNAF::SE ■ FZK::SE ■ GLOBAL_REDIRECTOR::SE ■ GSITEST::SE ■ HIROSHIMA::SE ■ Houston::SE ■ ISS::FILE ■ ITEP::SE ■ JINR::SE ■ KFKI::SE
■ Kolkata::SE ■ Legnaro::SE ■ MEPHI::SE ■ Prague::Disk2 ■ Prague::DISK ■ SPbSU::SE ■ Subatech::SE

SE Information -> xrootd -> Per SE details



Statistics

Traffic IN					
Farm	Last value	Min	Avg	Max	Total
pcaliense04.cern.ch	226.9 KB/s	11.44 KB/s	109.6 KB/s	502.1 KB/s	62.77 GB
pcitdm07.cern.ch	0.104 KB/s	63.51 B/s	362.5 KB/s	35.42 MB/s	64.12 GB
voalicefs01.cern.ch	469.8 KB/s	1.314 KB/s	183 KB/s	8.568 MB/s	105.2 GB
voalicefs02.cern.ch	254.2 KB/s	0 B/s	185.6 KB/s	12.96 MB/s	106.7 GB
voalicefs03.cern.ch	307.9 KB/s	0.73 KB/s	109.9 KB/s	2.032 MB/s	62.97 GB
voalicefs04.cern.ch	518.9 KB/s	1.448 KB/s	193.2 KB/s	6.543 MB/s	111.1 GB
voalicefs05.cern.ch	461.9 KB/s	1.748 KB/s	256.6 KB/s	8.725 MB/s	147.5 GB
Total	2.187 MB/s		1.368 MB/s		660.4 GB

Traffic OUT					
Farm	Last value	Min	Avg	Max	Total
pcaliense04.cern.ch	27.55 KB/s	4.381 KB/s	15.88 KB/s	90.45 KB/s	9.101 GB
pcitdm07.cern.ch	64.26 B/s	33.93 B/s	9.938 KB/s	948.3 KB/s	1.758 GB
voalicefs01.cern.ch	18.25 MB/s	5.366 KB/s	6.155 MB/s	57.95 MB/s	3.538 TB
voalicefs02.cern.ch	8.43 MB/s	1.946 KB/s	6.055 MB/s	41.78 MB/s	3.481 TB
voalicefs03.cern.ch	10.74 MB/s	0.885 KB/s	2.792 MB/s	31.31 MB/s	1.6 TB
voalicefs04.cern.ch	20.65 MB/s	2.743 KB/s	6.749 MB/s	47.73 MB/s	3.88 TB
voalicefs05.cern.ch	17.93 MB/s	1.696 KB/s	6.687 MB/s	44.86 MB/s	3.844 TB
Total	76.02 MB/s		28.46 MB/s		16.35 TB

Bandwidth tests

Muenster

Links: FDT, Kernel parameters tuning

<Muenster>

Chart view >

IN from						
No.	ID	Site	Speed (Mbps) ▲	Hops	RTT (ms)	Streams
1.	222439	NDGF	94.12	19	24.39	1
2.	222858	CNAF	93.87	20	29.69	1
3.	224909	Dortmund	88.95	15	4.54	1
4.	225881	IPNO	87.75	19	27.86	1
5.	222104	CCIN2P3	84.78	20	32.65	1
6.	208953	CSC	84.06	22	42.01	1
7.	222893	LUNARC	83.89	23	49.76	1
8.	224213	NIHAM	75.61	23	39.29	1

OUT to						
No.	ID	Site	Speed (Mbps)	Hops	RTT (ms)	Streams
48.	221542	KISTI	2.10	18	301.33	1
50.	226142	KISTI-CREAM	1.18	18	301.10	1
65.	212057	KPI		21	297.42	1
47.	225002	SaoPaulo	2.10	23	252.93	1
81.	224552	UNAM		23	232.98	1
49.	224627	Kolkata	2.01	27	232.51	1
46.	223418	Kolkata-CREAM	2.14	27	211.51	1
45.	224809	COMSATS	2.62	26	203.48	1
43.	224936	LBL	4.59	27	180.54	1
33.	222455	Houston	13.47	21	154.28	1
6.	222644	OSC	94.55	25	127.90	1
7.	224141	UsLHCNet				
63.	222879	JINR		17	64.95	1

Nodes configuration for test 222601

<SARA> Source

IP 145.100.13.49

OS Scientific Linux SL release 4.7 (Beryllium)

Kernel 2.6.9-78.0.17.ELsmp

TCP algo

Write buffers 131071 (4096 16384 131072)

Suggestions > You should increase the max (last) value of `net.ipv4.tcp_rmem` to at least 1MB for a more efficient operation on WAN, but we recommend a value between 4MB and 16MB (more than this is useless and potentially dangerous for the system)

<Muenster> Target

IP 128.176.200.134

OS Fedora Core release 3 (Heidelberg)

Kernel 2.6.10-1.770_FC3smp

TCP algo

Receive buffers 8388608 (4096 87380 8388608)

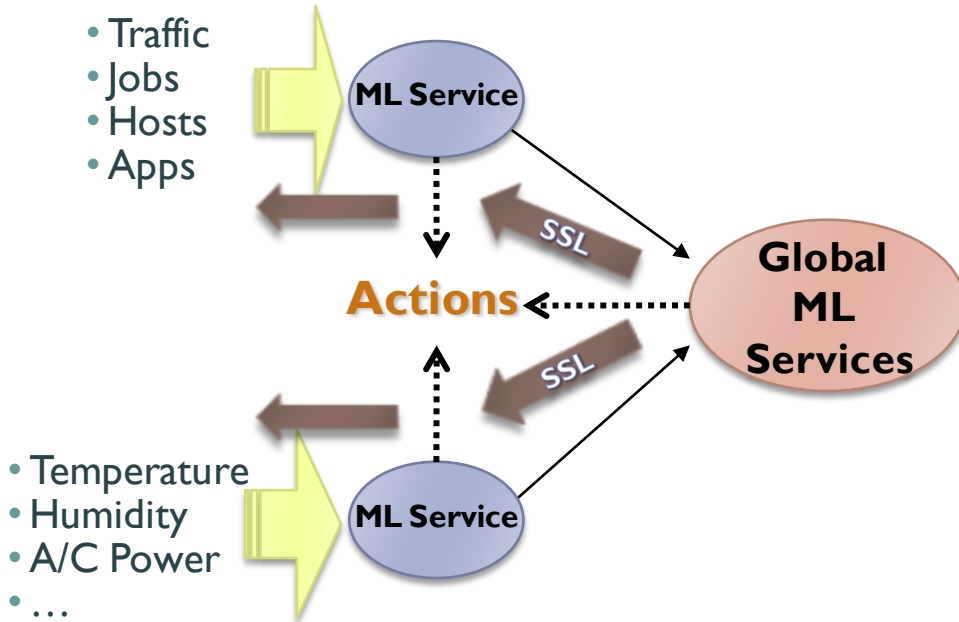
Suggestions

Similar tests in the past

Tests from Muenster to OSC

No.	ID	Speed (Mbps)	Hops	RTT (ms)	Streams
1.	222644	94.55	25	127.90	1
2.	216769	50.87	25	127.80	1
3.	210879		25	115.54	1
4.	204723		25	115.42	1
5.	199250	93.26	25	113.96	1
6.	183892	29.91	24	113.19	1
7.	175819	94.45	24	113.49	1
8.	171147	31.49	24	113.34	1
9.	166266	7.87	24	113.52	1
10.	161150	7.86	24	113.96	1
11.	156027	6.72	24	114.52	1
12.	150639	5.40	24	113.67	1

Automatic actions

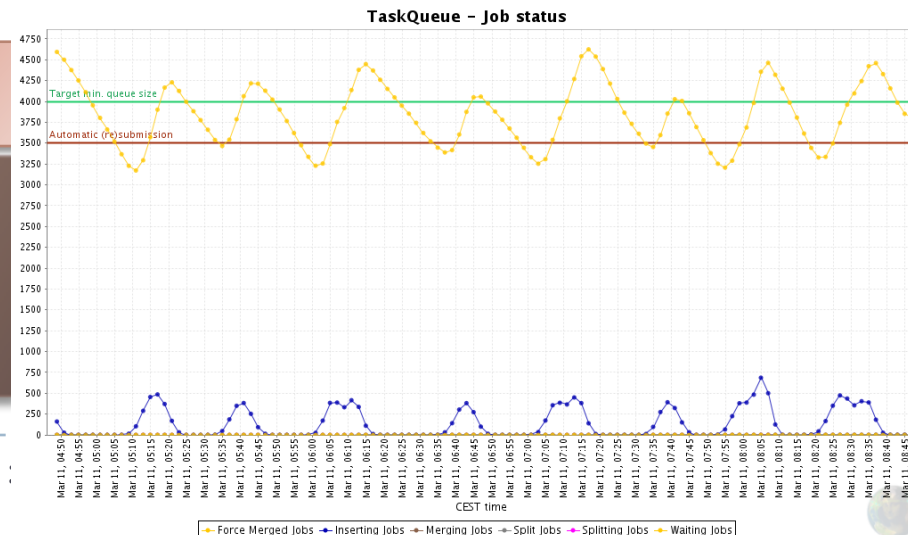


▶ Decisions taken upon:

- Absence/presence of some parameter(s)
- Values above/below predefined thresholds
- Arbitrary correlations between values
- User-defined code

▶ Action types:

- Notifications
- RSS/Atom feeds



Automatic actions in ALICE

- ▶ **Restart of services if the VoBox functional tests fail**
 - ▶ Only if central services are ok
 - ▶ Send mail if the restart doesn't solve the problem
 - ▶ Try again every 12 hours
- ▶ **Storage elements testing from the central point**
 - ▶ Notifications if tests fail
- ▶ **Maintaining the DNS aliases of central services**
 - ▶ Remove offline or overloaded services
 - ▶ Automatically adding new service instances
- ▶ **MC production jobs (LPM)**
- ▶ **Other notifications (proxies, SAM tests, central services)**

Notifications

The screenshot shows a Mozilla Firefox browser window displaying the MonALISA Repository for ALICE website. The browser's address bar shows the URL <http://pcalimonitor.cern.ch/xml.jsp>. The website header includes the ALICE logo, the MonALISA logo, and navigation links: Repository Home, Administration Section, ALICE Reports, Events XML Feed (highlighted with a red box), Firefox Toolbar, and MonaLisa GUI. The main content area is titled "ALICE Repository" and contains a sidebar with a tree view of repository categories, including "ALICE Repository" (highlighted with a red box), Google Map, Shifter's dashboard, Running trend, Production info, Job Information, SE Information, Services, Network Traffic, FTD Transfers, CAF Monitoring, SHUTTLE, LCG exp. monitoring, Build system, Bandwidth tests, and Dynamic charts. The main content area features a text block explaining that users can subscribe to Atom feeds or email alerts. Below this, a section titled "All events (XML, Email)" lists various site services, each with a link to subscribe via XML or Email. The services are organized into columns labeled with letters A through M. A "Running jobs trend" gauge is visible in the bottom left corner, showing a value of 10059 jobs.

ALICE Grid Monitoring with MonALISA - ATOM feeds - Mozilla Firefox

File Edit View History Bookmarks Tools Help

<http://pcalimonitor.cern.ch/xml.jsp>

AliEn Repository 10059 Running Jobs Open issues (153) Central Services New messaging system. No TF on Thursday, 21 May 2009 Admin Section

ALICE MonALISA MONitoring Agents using a Large Integrated Services Architecture

Repository Home Administration Section ALICE Reports **Events XML Feed** Firefox Toolbar MonaLisa GUI

ALICE Repository

- ALICE Repository
- Google Map
- Shifter's dashboard
- Running trend
- Production info
- Job Information
- SE Information
- Services
- Network Traffic
- FTD Transfers
- CAF Monitoring
- SHUTTLE
- LCG exp. monitoring
- Build system
- Bandwidth tests
- Dynamic charts

close all

This page: bookmark, URL

Running jobs trend

10059 Jobs

You can subscribe to one or more Atom feeds or by email to be notified when something (usually bad thing) happens. To unsubscribe from email alerts please follow the Unsubscribe link .

If you need a client here is a list to start from.

Atom feeds publish the same information as you can see in the annotations.

All events (XML, Email)

- Operational log (XML)
- TaskQueue events (XML)
- FTD/FTS log (XML)
- Central services (XML, Email)
- Site services (XML, Email) (all sites, or choose one from the list below)

A <ul style="list-style-type: none">Aalborg (XML, Email)aliendb5.cern.ch (XML, Email)Athens (XML, Email)	B <ul style="list-style-type: none">Bari (XML, Email)Birmingham (XML, Email)BITP (XML, Email)Bologna (XML, Email)Bratislava (XML, Email)	C <ul style="list-style-type: none">Cagliari (XML, Email)Catania (XML, Email)CCIN2P3 (XML, Email)CERN (XML, Email)CERN_gLite (XML, Email)CERN-L (XML, Email)CERNMAC (XML, Email)Clermont (XML, Email)CNAF (XML, Email)CNAF-CREAM (XML, Email)COMSATS (XML, Email)CSC (XML, Email)CyberSar_Cagliari (XML, Email)Cyfronet (XML, Email)	D <ul style="list-style-type: none">DCSC_KU (XML, Email)Dortmund (XML, Email)	F <ul style="list-style-type: none">Florence (XML, Email)FZK (XML, Email)FZK-PPS (XML, Email)	G <ul style="list-style-type: none">Grenoble (XML, Email)GRIF_DAPNIA (XML, Email)GS1 (XML, Email)
H <ul style="list-style-type: none">Hiroshima (XML, Email)Houston (XML, Email)	I <ul style="list-style-type: none">IC (XML, Email)IHEP (XML, Email)IHEP-CREAM (XML, Email)	J <ul style="list-style-type: none">JINR (XML, Email)Jyvaskyla (XML, Email)	K <ul style="list-style-type: none">KFKI (XML, Email)KISTI (XML, Email)KISTI-CREAM (XML, Email)	L <ul style="list-style-type: none">LBL (XML, Email)Legnaro (XML, Email)Legnaro-CREAM (XML, Email)	M <ul style="list-style-type: none">Madrid (XML, Email)MEPHI (XML, Email)Muenster (XML, Email)

Firefox toolbar expanded

ALICE Grid Monitoring with MonALISA - - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://pcalimonitor.cern.ch/map.jsp

AliEn Repository 9986 Running Jobs / Open issues (159) Central Services Admin Section

Main entry page Google Map MonALISA GUI Statistics Preferences... Refresh About

Running jobs history Running trend Done jobs history TaskQueue status TaskQueue history Site services status Site proxies Storage status SAM Tests

Services (98) Proxies (33) Storage (15) SAM (13) Other (0)

Kolkata : Alien proxy has expired
Kolkata : Delegated proxy has expired
Kolkata : Proxy Server has expired
Kolkata : Alien proxy has expired
Kosice : Delegated proxy has expired
Kosice : Proxy Server has expired
UNAM : 23 May 03:59 : Unable to get delegation
UNAM : Delegated proxy has expired
Torino : Proxy Server has expired
Torino : Delegated proxy has expired
KISTI-CREAM : Alien proxy has expired
UiO : Alien proxy has expired
UPB : Alien proxy has expired
CREAM-CE : Alien proxy has expired
Bari : Alien proxy has expired
UsLHCNet : Alien proxy has expired
UPB : Alien proxy has expired
monalisa1.cern.ch : Alien proxy has expired
SaoPaulo : Delegated proxy has expired
SaoPaulo : Proxy Server has expired
SaoPaulo : Delegated proxy has expired
SaoPaulo : Proxy Server has expired
Trujillo : Proxy Server has expired
Trujillo : Delegated proxy has expired
UsLHCNet : Proxy Server has expired
UsLHCNet : Delegated proxy has expired
UsLHCNet : Proxy of the machine has expired
Bratislava : Proxy Server has expired
Bratislava : Delegated proxy has expired

Administration Section

Services management LPM configuration Autorestart & notifications ML sites Series colors Pledged resources Regional sites grouping AliEn Packages AliEn LDAP

MonaLisa GUI

JINR Troitsk IITEP IHEP RRC-KI SINP IHEP BITP KPI KNU IC ISMA NIHAM

Imagery ©2009 TerraMetrics - Terms of Use

200 mi 500 km

Running Jobs

This page: bookmark, URL

Running jobs trend

Waiting for maps.google.com...

AdBlock

Site monitoring

- ▶ Using a small ApMon daemon on each WN
 - ▶ Or SNMP, Ganglia ...
- ▶ Send data to the MonALISA service running on the VoBox
- ▶ Run your own Repository to archive data, display it and implement your own automatic actions
- ▶ GSI: <http://lxgrid2.gsi.de:8080/>
- ▶ Muenster: <http://gridikp.uni-muenster.de:8080/>
- ▶ CAF: <http://pcalimonitor.cern.ch/stats?page=CAF/machines>